

ABSTRACT

A bipolar transistor is described whose I-V curve is such that it operates in two regions, one having low gain and low power consumption and another having higher gain and better current driving ability. Said transistor has a base region made up of two sub regions, the region closest to the emitter having a resistivity about an order a magnitude lower than the second region (which interfaces with the collector). A key feature of the invention is that the region closest to the collector is very uniformly doped, i.e. there is no gradient or built-in field present. In order to produce such a region, epitaxial growth along with boron doping is used rather than more conventional techniques such as ion implantation and/or diffusion.